

Application No. 09/069,847  
Attorney's Docket No. 010091-035

C2  
concl'd

101. The method of Claim 92, wherein said linker is a carbon linker comprising a twelve carbon chain.--

### REMARKS

Entry of the foregoing amendments and favorable consideration on the merits, pursuant to and consistent with 37 C.F.R. §1.112, are respectfully requested.

At the outset, the Examiner is respectfully thanked for the courteous interview held on November 4, 1999 with inventors Dr. Myun Ki Han and S. Paul Lee; Kelli Watson, a representative of the Assignee; and the undersigned. During said interview, Claims 64 through 89, submitted on October 27, 1999 were discussed in relation to the art of record. In particular, the then three independent Claims 64, 66 and 67, as well as dependent Claim 79, were discussed.

Based on such interview, it is Applicants' understanding that Claims 64 through 66, and claims dependent thereon, should be free of the outstanding prior art rejections. With respect to Claim 67 and claims dependent thereon, a proposed amendment to incorporate a recitation that the donor or acceptor is attached to the oligonucleotide by a linker that inhibits quenching was discussed. It was noted that this feature is not suggested by the prior art. Also, the inventor, Dr. Han, advised the Examiner that specific support for the significance of such a linker (with respect to inhibition of quenching) can be found at least at page 34, line 16 to page 35, line 17, of the subject application. Also,

Application No. 09/069,847  
Attorney's Docket No. 010091-035

at page 10, line 25 to page 11, line 9, the attachment of donor or acceptor fluorophores by use of a linker arm, e.g., a linker arm having a twelve carbon atom linker, is disclosed. Thus, the added feature to Claim 67 is supported by the disclosure.

Further, it was indicated during the interview that Applicants would likely submit an additional claim that would essentially combine Claims 66 and 67. This has been done in the form of new Claim 92. Also, new Claims 93 through 100 are added which are directed to preferred embodiments. As these amendments properly further limit the independent claims, it is anticipated that all of the current claims should be in condition for allowance.

For the convenience of the Examiner, and as suggested during the interview, specific support for all current pending claims may be found in the original specification or claims as follows:

Claims 64 and 65 find support in original Claim 1, and at page 12, lines 13-15.

Claim 66 finds support in original Claims 1, 12, 13 and 14.

Claim 67 finds support in original Claims 1 and 3, page 15, lines 11 to 26 (discloses donor/acceptor fluorescent pair), page 10, line 25 to page 11, line 14, wherein the preferred use of linker arms to effect attachment of such fluorophores is provided, and page 34, line 16 to page 35, line 17, wherein the effects of such linker arms on quenching (inhibition) are discussed.

Claims 68 and 69 find support in Example 3.

Application No. 09/069,847  
Attorney's Docket No. 010091-035

Claims 70 and 71 find support in original Claim 14.

Claim 72 finds support in Example 2.

Claim 73 finds support in Examples 2 and 3.

Claim 74 finds support in Example 2.

Claim 75 finds support, e.g., in Example 2, page 35, lines 3-6.

Claim 76 finds support, e.g., in Example 2, page 35, lines 10-12.

Claims 77 and 78 find support, e.g., at page 11, lines 5 to 9.

Claims 79 and 80 find support, e.g., at page 10, line 20 to page 11, line 9, and the paragraph bridging pages 34 and 35.

Claim 81 finds support in original Claim 3.

Claim 82 finds support at page 12, lines 16 to 21.

Claim 83 finds support at page 15, last paragraph.

Claims 84, 85, 86, 87, 88 and 80 find support at page 10, lines 9 and 10.

Claims 90 and 91 find support at page 11, lines 9 to 14, wherein the use of linker arms is described, as well as page 34, line 15 to page 35, line 17.

Claims 92 through 101 find support is the disclosure as set forth above for Claims 66, 67, 69 through 76, and 80, respectively. [92 (66, 67); 93 (64); 94 (70); 95(71); 96 (72); 97 (73); 98 (74); 99 (75); 100 (76); 101 (80)]

As discussed above, based on the recent interview, and in order to expedite prosecution Claim 67 has been amended to recite that at least one of the acceptor and

Application No. 09/069,847  
Attorney's Docket No. 010091-035

donor fluorophore is attached to the oligo via a linker that inhibits quenching. As disclosed in the application in Example 2, et seq., at pages 34 and 35, the use of such a linker provides for enhanced results as it inhibits quenching upon interaction of the labeled oligo with another nucleic acid sequence, thereby enhancing assay sensitivity. This concept is not fairly suggested by the prior art.

As discussed above and at the interview, support for such linkers, as well as the enhanced results achieved thereby, can be found in Example 2, specifically at pages 34 and 35 of the specification. Therein, the inventors discuss the effects of such a linker (12 carbon atom linker exemplified) on quenching (inhibition) vis-a-vis attachments that do not utilize such a linker (fluorescence becomes quenched, i.e., reduced) when the labeled oligo hybridizes to another sequence. The use of such a linker, and the effects thereof on the results of the subject continuous fluorometric assay method for detecting specific nucleic acid sequences, is not fairly suggested by the prior art.

Therefore for the reasons set forth in Applicants' previous Reply and herein, allowance is respectfully believed to be in order.

Also, given the importance of this application, it would be greatly appreciated if the allowance could be processed as expeditiously as possible.

Application No. 09/069,847  
Attorney's Docket No. 010091-035

If the Examiner has any questions or concerns, he is respectfully requested to contact the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: Robin L. Teskin  
Robin L. Teskin  
Registration No. 35,030

P.O. Box 1404  
Alexandria, VA 22313-1404  
(703) 836-6620

Date: November 8, 1999

#### Certificate of Transmission

I hereby certify that the foregoing SUPPLEMENTAL REPLY AND AMENDMENTS PURSUANT TO 37 C.F.R. §1.111 is being facsimile transmitted to the Patent and Trademark Office on November 8, 1999.

Robin L. Teskin

Robin L. Teskin  
Typed name of person signing certificate